CLEATING RIDGE COPPER
ON SLATE ROOFS

Joseph Jenkins

THERE ARE MANY WAYS TO FINISH HIPS AND RIDGES ON SLATE ROOFS, including using ceramic tiles (see Flexim article this issue), slate ridges and hips, and metal ridge rolls. Perhaps the most common traditionally used ridge and hip covering in the United States is metal. “Tin” ridge roll was popular in its day — it was inexpensive and could simply be nailed to the roof. It had to be painted on a regular basis however, or it rusted, and in the process, ran permanent rust stains down the roof. Many an older slate roof can be seen stained in this way as no one wanted to climb up onto the peak of the roof with a bucket of paint to paint the ridge (although this is a common task for slate roof restoration professionals even today).

A better alternative to tin ridge is copper or stainless steel as neither will rust and therefor neither need to be painted. Copper is by far the more popular of the two because the metal is easier to work than stainless steel and copper seems to be more readily available to the consumer. Copper can also be “lead coated,” giving it a look similar to “terne coated stainless steel,” a dull gray shade that appeals to the architectural preferences of some. Otherwise, uncoated copper starts out shiny and richly golden, but soon turns dark brown and eventually green.

Ridge copper is generally available in two weights: 16 ounce and 20 ounce. Copper is rated according to ounces per square foot rather than gauge. A good quality, durable copper ridge will be made from half-hard 20 ounce copper. One issue with ridges is that people who work on slate roofs tend to access the ridges in order to maneuver around the roof, either by hooking ladders over the ridge or even standing up and walking on them. Walking on ridges is the easiest and fastest way to get around on a roof, especially when carrying a hook ladder. It takes some time to get the hang of it, but once the practice is mastered, slate roof work is faster and easier (don’t try this at home unless you’re a professional). Soft 16 ounce copper ridge can take a beating from foot traffic and ladder hooks, but half-hard 20 ounce copper is a lot more resistant to wear and tear.

Figure 1

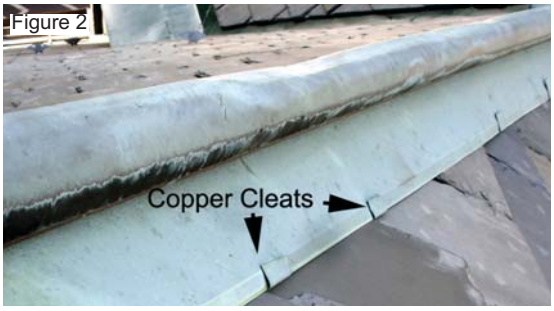

Figure 2

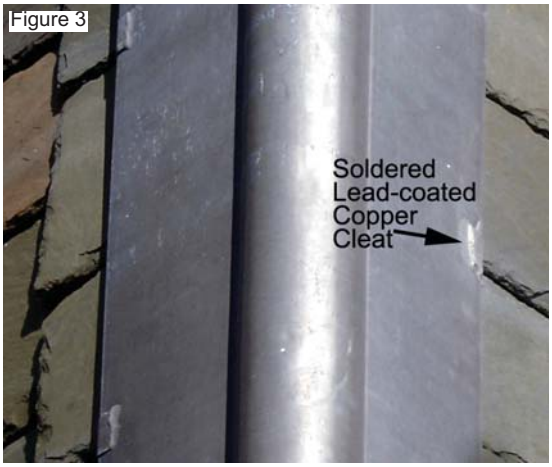

Figure 3

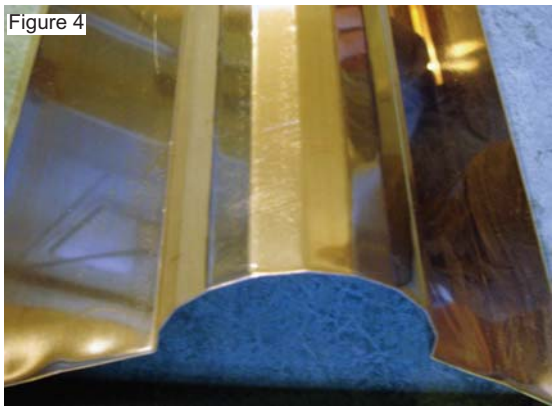

Figure 4

The easiest and fastest way to install the ridge is simply to nail it to the roof using copper nails. The nail heads can leak, however, so they have to be caulked or gasketed. An alternative is to use screws. In any case, the fasteners have to be metallically compatible with copper, meaning they have to be copper, brass or stainless steel, *not* steel, iron or galvanized metal.

Faster and easier is often not the best way to do things because it can create work later down the road that no one wants to do, such as recaulking nail heads along metal ridges. The solution is to install the ridges with no exposed fasteners, and one way to do this is to use cleats. A cleated ridge takes a bit longer to install than a nailed or screwed ridge, but there is no maintenance required once the ridge has been installed. Therefore, it takes less time in the long run. So here is some information about how to cleat copper ridges.

One of the oldest and simplest cleated ridges I have closely examined was on a courthouse in eastern Pennsylvania. Each cleat was composed of a single layer copper strip approximately 1.5” X 3” nailed to the roof deck with a single iron nail (Figure 1). The cleats were on about two foot centers and were simply folded around the ridge with no solder and no rivets — nothing attaching the cleat to the ridge metal (Figure 2). What struck me as interesting about this system is that it

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Figure 5

Figure 6

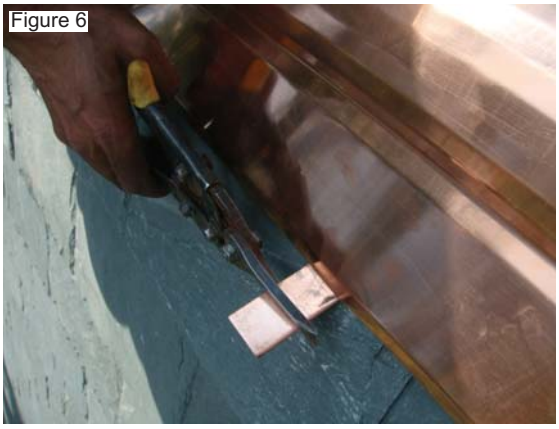

Figure 7

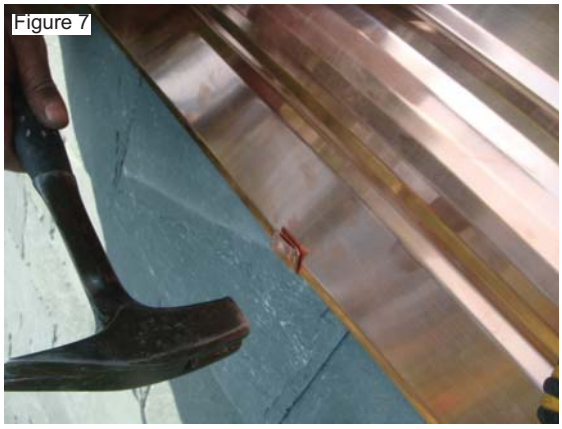

Figure 8

was still intact even though it had been installed in 1894 and iron nails had been used on the copper cleats.

Perhaps the most conscientiously installed cleat system I have been able to examine was on a slate roof at Yale in New Haven, Connecticut. Here, the lead-coated copper ridge was installed in a similar manner to the courthouse ridge, but the cleats were fully soldered to the ridge (Figure 3). There is no way this ridge was going to go anywhere.

A local, recent, residential installation in western Pennsylvania utilized 20 ounce half-had copper ridge that had been shop fabricated by the roofing crew. The ridge was made of 12” copper stock and the roll made by hand on a hand brake (Figure 4). Here the copper ridge roll was cleated to the roof using 20 ounce half-hard copper cleats made from 2” X 16” strips, folded lengthwise to create a 1” X 16” strip of 20 ounce copper, double thickness. The strip was than bent to the angle of the roof ridge and nailed in place every two feet, using 2.5” 10 gauge copper roofing nails (Figure 5).

The ridge is then laid over the cleats and held into place as the cleats are snipped to the correct length (Figure 6),bent around the edges of the ridge, and pounded down gently with a hammer (Figure 7).

The exposed cleat tab is then drilled with a 1/8” metal drill bit (Figure 8), then riveted with a 1/8” copper/brass pop rivet with a grip length of .188" to .250" (Figure 9).

It’s a two-man job (Figure 10), and a bit tedious, but when finished, the ridge has no exposed fasteners, nothing to leak, is very sturdy, and perhaps best of all, is maintenance free.

A video of this process can be viewed at SlateRoofCentral.com/videos.html.

20 ounce copper ridge and straps can be bought at SlateRoofWarehouse.com Ph: 814-786-9085

Figure 9

Figure 10

The ridge before the copper is installed (above). The finished ridge (below).